

REMARKS

The Examiner has objected to claims 25, 26, 28, 29, and 30 because of the following informalities: the phrases “an electroless a nickel layer”, “electroless nickel layer”. The Examiner has suggested to change “an electroless a nickel layer” and “electroless nickel” to “a nickel layer” and “nickel layer” respectively. Applicant has made the suggested changes as reflected in amended claims 25, 26, 28, 29, and 30.

Claim Rejection – 35 U.S.C. §112/103

The Examiner has rejected claims 1, 2, 25, and 27 under 35 U.S.C. 112 as failing to comply with the enablement requirement. Specifically, it is the Examiner’s position that Applicant fails to clarify how the nickel base layer and the deposited nickel layer have different hardness properties.

Claims 1, 2, 25, and 27 claim a tool used to impress patterns on a substrate. The tool includes a base portion, comprising nickel, and includes a pattern to impress upon a substrate. The tool further includes a nickel layer deposited over the base portion which has a hardness value greater than that of the base portion. That is, Applicant claims a tool including a nickel base portion and a subsequent deposited nickel layer upon, which the deposited nickel layer has a greater hardness value than that of the nickel base portion.

Applicant discloses in paragraph [0024] on page 6 that the deposited nickel layer, electroless nickel-phosphorous alloy, has a hardness value (HV) of 500 on the Vickers Hardness Scale. Also, Applicant discloses that the electroless deposition process produces a hard layer because of the amorphous, non-crystalline structure that results from the chemical deposition process. However, the composition of the base portion, pure nickel, is polycrystalline and therefore does not share the same hardness property of the amorphous, non-crystalline deposited nickel layer. Furthermore, Applicant discloses that the deposited nickel layer may be annealed and heat treated to increase the hardness value of the deposited nickel layer. Moreover, Applicant discloses in paragraph [0025] that the deposited nickel layer may include a reinforcing constituent such as silicon carbide, aluminum oxide, synthetic diamond particles, or polytetrafluoroethylene to

increase the hardness of the deposited nickel layer. Additionally, Applicant discloses in paragraph [0027] that the base portion may be a material that is ductile, easy to process, and that additional hardness is not needed because the base portion does not contact the package substrate during processing. Therefore, it is Applicant's position that Applicant adequately disclosed the different hardness properties of the base portion and the deposited nickel layer.

It is Applicant's understanding that Isono fails to render Applicant's claims 1-3, 5-7, 10, 25-27 obvious. Applicant teaches the improved wear resistance of a stamper which, as claimed, has a deposited nickel layer of greater hardness than the base portion. In contrast, Applicant understands Isono to disclose a stamper 8 which includes a base nickel layer 7 and a three stratum conductive layer film 6, including first nickel layer 3, intermediate tantalum layer 4, and second nickel layer 5, to prevent the conductive layer film 6 from flaking off base nickel layer 7. Isono does not teach that either first nickel layer 3 or second nickel layer 5 have a greater hardness value than base nickel layer 7. In addition, Isono fails to teach a method to increase the hardness value of first nickel layer 3 or second nickel layer 5 such as through electroless deposition, annealing, heat treatment, or adding reinforcement constituents as disclosed by Applicant. Isono fails to teach or support any purpose or motivation in which to increase the hardness of either first nickel layer 3 or second nickel layer 5 relative to the base nickel layer 7. Therefore, it is Applicant's position that claims 1-3, 5-7, 10, 25-27 are not obvious in view of Isono and Applicant respectfully requests the Examiner to remove the 35 U.S.C. §103 rejection to these claims.


PETITION FOR EXTENSION OF TIME
PURSUANT TO 37 C.F.R. § 1.136 (a)

Applicant respectfully petitions pursuant to 37 CFR 1.136(a) for a one-month extension of time to file this response to the Office Action mailed September 26, 2005. The extended period is set to expire on January 26, 2006. A check in the amount of \$120.00 is enclosed to cover the fee for a one-month extension of time.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

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